

REMARKS/ARGUMENTS

Claims 1-3, and 16-19 are currently pending in this application. Claims 4-15 have been cancelled. Claims 1-3 and 16-19 have been amended to further define the invention. No new matter has been introduced through these amendments. The specification has been amended to correct minor typographical errors.

Rejections under 35 U.S.C. § 102(e):

Claims 1-19 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,801,659, to Garaza et al. (Garaza). In light of the amendments to claims 1-3, and 16-19, Applicants respectfully request removal of the rejection of claims 1-3, and 16-19 for the reasons discussed below.

Applicants respectfully submit that Garaza does not teach each and every feature of claim 1, as amended. Garaza teaches a method of producing test wafers for process simulation of image techniques. The teaching of Garaza provides a method for improving simulation software to accurately predict the final pattern produced by a masking process based upon actual results obtained using the masking process.

In contrast, the present invention is focused on creation of a desired conditioning state of an etch chamber through the use of simulated wafers containing materials anticipated to be released in the subsequent etch process with device wafers. Claim 1, as amended, includes a layer composed of a mixture of multiple materials disposed entirely over a first layer. The composition of the mixture is designed to simulate the ratio of the open or exposed area of the material to be etched on a device wafer to that of the area of the device wafer covered by photoresist, as defined through amended claim 19. Applicants submit that the disclosure of Garaza fails to teach or disclose a second layer having a mixture of multiple materials

disposed entirely over a first layer. For at least the reasons stated above, claim 1, as amended, is not anticipated by Garaza. Claims 2-3 and 16-19 depend from claim 1, therefore, for at least the above stated reasons, claims 2-3 and 16-19 are not anticipated by Garaza.

Rejections under 35 U.S.C. § 103(a):

Amended claims 1-3, and 16-19 are patentable over Garaza and in view of any admitted prior art and U.S. Patent 5,719,495 to Moslehi et al. (Moslehi). As will be explained below, the combination of Garaza with admitted prior art and Moslehi do not teach or disclose all of the features of amended claim 1. Furthermore, the combination of these references does not raise a *prima facie* case of obviousness against claim 1 as amended.

Moslehi provides a non invasive in-situ semiconductor wafer measurement technique for processing diagnosis and prognosis. The physical properties of metal layers or insulating layers on the semiconductor wafer are measured in-situ.

As mentioned above, Applicants respectfully submit that Garaza fails to teach the feature of a second layer having a mixture of multiple materials disposed entirely over a first layer. Moslehi does nothing to cure this deficiency. Nowhere does Moslehi disclose or teach a single layer having multiple materials that are configured to simultaneously generate byproducts during an etching operation.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references or in the knowledge generally available to one having ordinary skill in the art, to combine the references. Additionally, the references when combined must teach or suggest all the claim features. As discussed below, the Examiner has not established a *prima facie* case of obviousness because one having ordinary skill in the art would not have combined the references in the manner proposed.

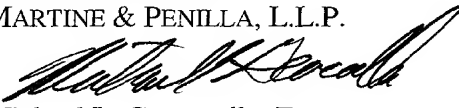
Specifically, one having ordinary skill in the art would not have combined Garaza with Moslehi as suggested by the Examiner. According to the Examiner, it would have been obvious to one skilled in the art to combine the teaching of having any of the material on the wafer surface into Garaza for easily forming a desired production wafer as taught by Applicants admitted prior art and a supported by Moslehi. Applicants respectfully disagree with this characterization. As shown by prior art Figures 1 and 2, the admitted prior art shows test wafers having distinct layers with a photoresist patterned on top. Nowhere does the Applicant disclose that the prior art includes a layer having multiple materials in order to simulate a production wafer. As a matter of fact, Applicant goes on to discuss the problem of not having an inexpensive test wafer that is patterned. Therefore, it is common to alternate between aluminum wafers and blanket photoresist wafers to address this problem.

Furthermore, the purpose of Garaza is to create an image or pattern on the wafer, while the present invention is void of any image or pattern as the mixture of multiple materials is applied to the entire substrate surface. Thus, to modify Garaza so that no pattern is produced, as is the case with the present invention, would render Garaza unsatisfactory for its intended purpose as the purpose for Garaza is to compare an actual pattern produced by a masking process to a computerized image for estimating the pattern. That is, the technique of Garaza is to create an image or design of photoresist on the surface of a wafer that does not completely cover the wafer, as opposed to the present invention. Additionally, Moslehi is directed toward in-situ monitoring during processing operations of an actual semiconductor wafer. The semiconductor wafer in Moslehi includes distinct single material layers typical of semiconductor wafers. Thus, the combination of Garaza, and Moslehi would not yield a wafer having a single layer with multiple materials. For example, a layer of photoresist and a metal as claimed in claim 2 is not taught or disclosed by the combination of Garaza, and Moslehi. For at least the above stated reasons, amended claim 1 is patentable under 35

U.S.C. § 103(a) over the combination of Garaza, the Applicants admitted prior art, and Moslehi. Claims 2-3 and 16-19 depend from claim 1, therefore, for at least the above stated reasons, claims 2-3 and 16-19 are patentable under 35 U.S.C. § 103(a) over this combination.

In view of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. A notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 749-6900 x6921. If any fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. LAM2P267A). A copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
MARTINE & PENILLA, L.L.P.



Michael L. Gencarella, Esq.
Reg. No. 44,703

Martine & Penilla, LLP
710 Lakeway Drive, Suite 170
Sunnyvale, California 94085
Telephone: (408) 749-6900
Customer Number 25920